



Godard Space Flight Center



# Knowing what we are flying/ testing

Mission Configuration Repository Demo

10-17-2012

N. Lindsey, Code 322

301-286-2047



# Mission Configuration Process Improvement



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**300** created a perpetual archive of Mission Configuration to give context to experience data. Resulting in an optimized system that can acquire to data routinely from Mission CM Systems and provide access to that data within and across missions using both project and standard nomenclature.

<https://gsfcmmissionconfiguration.gsfc.nasa.gov>

## Before: Project System Data Searches

Number	Title
2036501b	Mounting Plate Star Camera Dwg 2036501b
2036837	MCS Flight Actel Design GLAS Drawing No. 2036837
2037100	Assembly, Laser Transmitter GLAS Flight Dwg No. 2037100
2037103-2	Pressure Sensor Assembly with Schematic References GLAS Dwg 2037103-2
2037103-CM	Laser Transmitter Mechanical Interface Control Drawing GLAS Dwg No. 2037103-CM
2037123-CM	Retainer, External Risley GLAS Laser Transmitter GLAS Dwg No. 2037123
2037315	Housing, External Risley GLAS Laser Transmitter GLAS Dwg No. 2037315
2038372	Thermal Blanket GLAS Laser Assembly GLAS Dwg No. 2038372
2038376	Thermal Blanket E-Box Baseplate GLAS Dwg No. 2038376
2038382	Thermal Blanket GLAS Secondary Support Model GLAS Dwg No. 2038382
2101014	Bracket, Laser Detector Module
2101029	BRACKET, STELLAR DETECTOR MODULE
2133119	Flexure Composite Atlas
2153300	ATLAS, SPACECRAFT TO MECHANICAL, ICD
2154061	AVIM Ferrule, Four Fiber, TAMS LS
2154500	ATLAS, ICESAT, ASSEMBLY, TBE WITH AIRBORN C
2154501	Assembly, Backplane, Airborn Test Fixture, MEB, AT
2154502	Schematics, Backplane, Test Bench Equipment (TBE
2154503	Printed Wiring Board, Backplane, Test Bench Equip
2154504	Test Bench Electronics (TBE), Side Frame Test Fixtu

ITEM	REQD	REQD	PART NO.	TRAVELING
1			CD8430005-011	TRAVELING

UNLESS OTHERWISE SPECIFIED-DIMENSIONS ARE IN INCHES

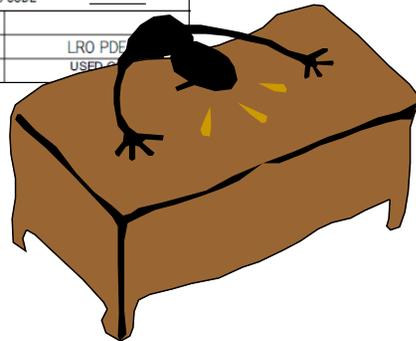
TOLERANCES:

.XX	.XXX	FRACTIONS	125/
±.02	±.005	±1"	±1/16

REMOVE ALL BURRS AND SHARP EDGES .010R OR CHAMFER MAX.

FLIGHT HARDWARE  
 HARDNESS TEST NOT REQUIRED  NON FLIGHT  
 TEST HARDNESS PER ASTM E-18, LOCATION OPTIONAL  
 TEST HARDNESS PER ASTM E-18 WHERE INDICATED ON FIELD OF DRAWING THUS  
 NO NON-DESTRUCTIVE EXAMINATION (NDE) REQ'D  
 NDE REQUIRED PER S-313-009 CODE

2086988	LRO PDF
NEXT ASSY	USED ON



## Now: Mission Configuration Data Searches



### Team:

- Nancy J Lindsey – Mission Configuration Architect/POC
- Orson N John – Mission Configuration Data Analyst
- Anthony DiVenti – Mission Configuration Sponsor/Reliability Branch Chief
- Nancy Rackley – B-Line Express Mission Configuration Development Program Manager with Developers: Feng Na, Colleen Hoffmeister, Katedra Hackett, Andrew Mauer & Diana Barnes



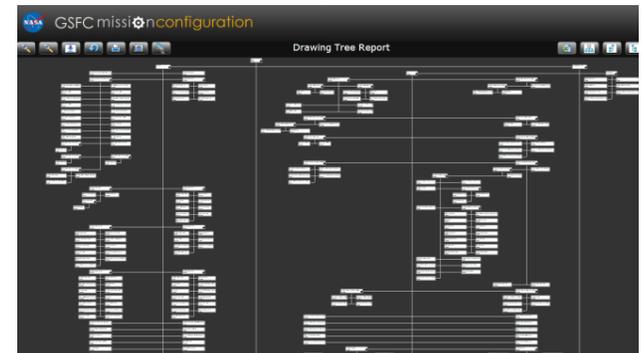
# Capabilities



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- **Current Status:**

- With Standard Taxonomy & as-built data , GSFC can predict more accurate/ flight-based/ realistic failure rates/modes to better assist in risk informed decision making;
- GSFC Advisory data searches becomes possible;
- Searching by Vendor/Part Number becomes possible;
- Create Drawing Trees from drawing data autonomously →
- Impact/Value resulting from new process:
  - ✓ Data Gathering Process step reduction from:  
 $\infty$  to  $<10$  steps
  - ✓ Enhancing Accuracy of : failure rates prediction operational anomalies/testing execution, etc.
  - ✓ Cost avoidance by: Heritage Knowledge & Lessons Learned sharing
- And More



- **Moving Forward**

- Mission Configuration is Operational and ready to import more orbital and developmental mission data.
- LDCM-TIRS data has been readied during this past summer for importing.

Full Capability Realization Depends on Mission data/support.



GSFC mission configuration

GSFC (Code 322) &  
B-Line EXPRESS

<https://gsfcmmissionconfiguration.gsfc.nasa.gov/>



# missionconfiguration



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**GSFC missionconfiguration**

Advanced Search

1. Mission(s)  
Select All  
 LRO  SDO

2. Subsystem: -- Select --

3. Component: -- Select --

4. Component Type: -- Select --

5. Component Subtype: -- Select --

6. Alternate Nomenclature  
Please make a Component, Component Type or Component Subtype selection.

Filter Results by Context: (optional)

Search Reset

Records Returned: 0

Mission	Location	Filename	Document Type	Date Released

Save Search Export Results

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**GSFC missionconfiguration**

Lunar Reconnaissance Orbiter

Avionics Header Dual Bore Heat Pipe

Block Diagram Drawing Parts List ECR

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**GSFC missionconfiguration**

Advanced Search

1. Mission(s)  
Select All  
 LRO  SDO

2. Subsystem: Attitude Control

3. Component: Reaction Wheel Asses

4. Component Type: None

5. Component Subtype: -- Select --

6. Alternate Nomenclature  
Select All + Add  
 Momentum Wheel  
 RW  
 RWA

Filter Results by Context: (optional)

Search Reset

Records Returned: 7

Mission	Location	Filename	Document Type	Date Released
LRO	MAC	2084901.PDF	Drawing	
LRO	LTPC	2070684.PDF	Drawing	
LRO	RWA 2	2087041.PDF	Drawing	
LRO	Star Tracker	2094447.PDF	Drawing	
LRO	Avionics Header Dual Bore Heat Pipe	2095435E-E001.PDF	ECR	

Save Search Export Results

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**GSFC missionconfiguration**

Lunar Reconnaissance Orbiter

RWA 2

Block Diagram Drawing Parts List ECR

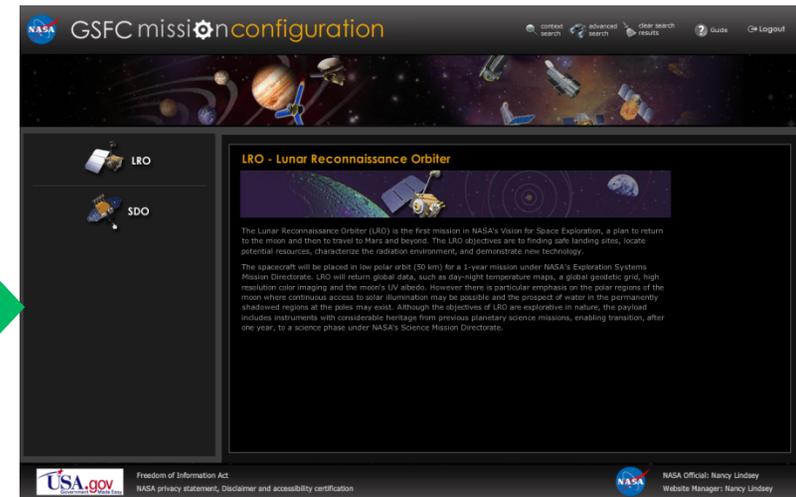
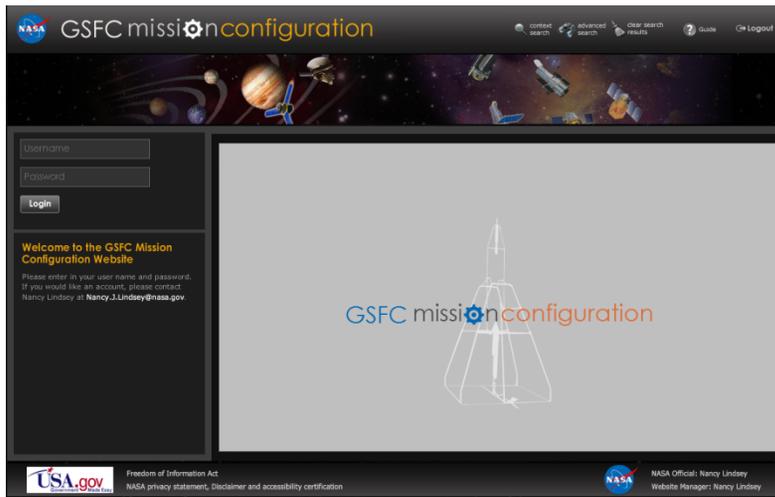
USA.gov Freedom of Information Act NASA privacy statement, Disclaimer and accessibility certification NASA Official: Nancy Lindsey Website Manager: Nancy Lindsey



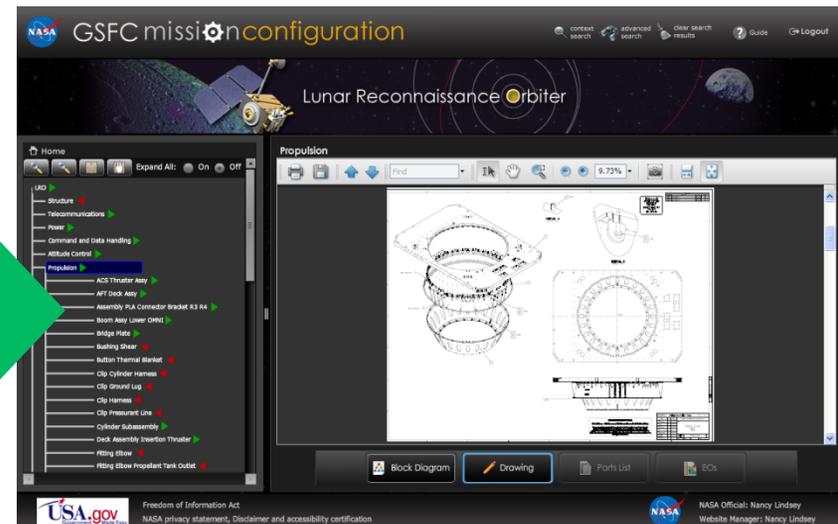
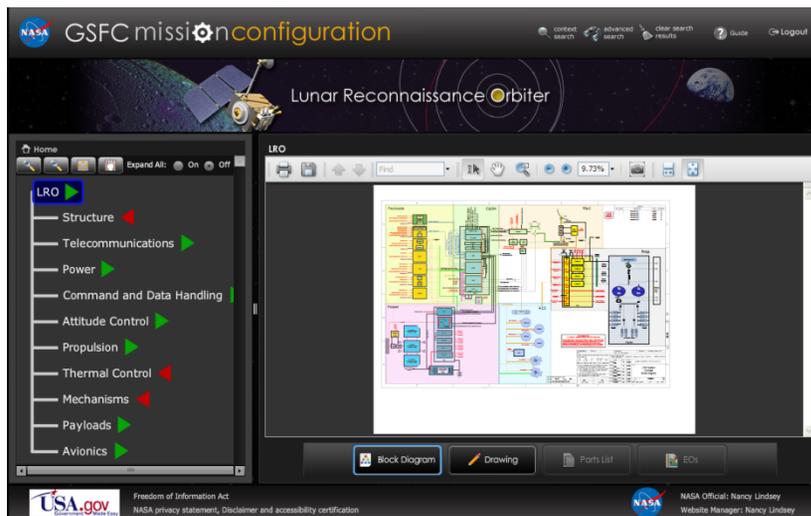
# missionconfiguration



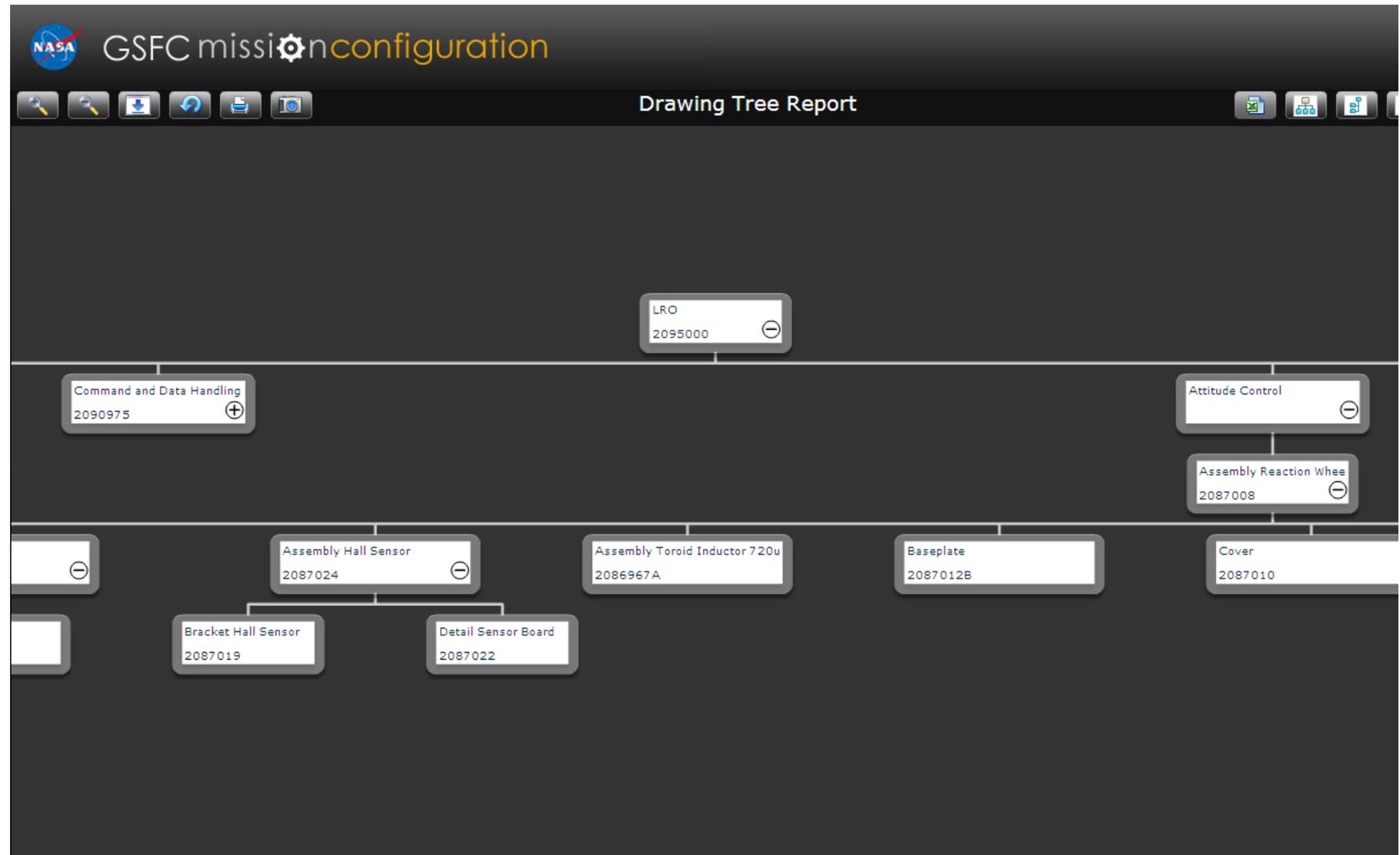
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QUESTIONS